



Afterschool Adventure!



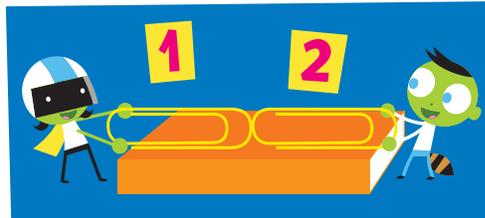
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Professional Development Extension

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Background for Leaders



This unit focuses on data collection and analysis skills for 4-5 year olds. Through these activities and games children will explore counting and sorting, analyzing, and representing data.

Counting

Young children can typically count to five by age four and can count to ten proficiently by age five. Some children will be more advanced and count higher than these benchmark numbers easily on their own, while others will need more support. The goal at age four is to count up to ten and the goal at age five is to count up to twenty. It is essential that to model proper counting procedures: saying numbers in the correct order, connecting each number to just one object as you count (showing a one-to-one correspondence), and connecting the number being said to the numeral that represents it.

Sorting

Children at this age have an extensive vocabulary to describe the world around them; this proves beneficial when sorting. Children need to recognize one or more attributes of the objects being sorted. Children should be able to sort by color, shape, length, or weight. They may not be able to use formal measurements to make these comparisons, but should be able to tell when something is **lighter** or **heavier** and when something is **longer** or **shorter**. Children may use repetition of non-standard units to measure length, such as: **How many paperclips long is the book?**

Young children are capable of sorting into three groups at a time, however each group should consist of no more than ten items. Therefore, children should be sorting no more than thirty items at a time. Challenge children to approach problems in new ways by determining the sorting criteria on their own or possibly determining a different way to sort items that have already been sorted. Children should be able to **count how many in each group** and compare amounts telling **which group has more and which group has less** once objects have been sorted.

Data Collecting & Analysis

Children at this age should be exposed to tally charts, bar graphs, and pictographs. Children first learn tally charts as a way of keeping track of data, by taking surveys, or making observations. This data can then be transferred into a bar graph. When making bar graphs children should be given a grid to complete or be aided in creating a graph format with standard intervals so that comparisons are not deceiving. Children may also display data using a pictograph; initially a pictograph should represent a one to one correspondence where each object on the graph stands for one item, eventually this representation be made more challenging by making one object represents two items. At this age children should be comparing no more than three categories of data on one graph. When they are analyzing the data they should be able to tell **how many more or less items are in one category than another and which group has the most or the least**.



This out-of-school resource was developed by Maryland Public Television.

The contents of this activity were developed under a grant from the Department of Education. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government. [PR/Award No. U295A100025, CFDA No. 84.295A]. • © 2014 Public Broadcasting Service.